Claims

1. Device for joining the faces of parts (1, 1′) with great longitudinal extension, in particular rods with profiled cross section, such as rails and the like, by friction welding, characterized in that the friction welding device (A) features clamping means (2, 2′) for the part ends (11, 11′) that can be positioned against one another and at least one clamping means can be moved relative to the opposite one, parallel to the part cross-sectional plane (12, 12′) in an axially divergent manner and can be positioned in an axially aligned manner to the part with freedom of movement.
2. Device according to claim 1, characterized in that at least one clamping means can be moved in a circulating manner around the joint axis (X).
3. Device according to claim 1 or 2, characterized in that both clamping means (2, 2′) can be moved in the same direction in a circulating manner around the joint axis (X) at a respectively opposite spacing from the same.
4. Device according to one of claims 1 through 3, characterized in that a drivable eccentric means (3, 3′) that can be adjusted in the divergence from the rotational axis is provided for the movement and for the axially aligned resting position of a clamping means (2, 2′).
5. Device according to one of claims 1 through 4, characterized in that two drivable eccentric means (3) are provided per clamping means (2) and operatively connected to it.
6. Device according to one of claims 1 through 5, characterized in that the opposite clamping means (2, 2′) respectively can be driven by adjustable eccentric means (3, 3′) positioned on a shaft (4) or can be adjusted with freedom of movement, whereby a divergence from the rotational axis preferably in the opposite direction and an axially aligned alignment of the part ends (11, 11′) are provided by a control (31, 31′) of the eccentric means that preferably acts simultaneously.
7. Method for joining parts (1, 1′) with great longitudinal extension, in particular rods with profiled cross section, such as rails or the like, by friction welding, characterized in that the part ends (11, 11′) are provided with flat axially normal cross-sectional surfaces (12, 12′), and subsequently in a heating step the cross-sectional surfaces (12,

12') to be joined are pressed against one another and at least one part end is moved in an axially divergent manner relative to the opposite one and in this manner the face areas are brought to an increased temperature or joining temperature, at which an axially aligned alignment of the parts (1, 1') takes place with free movement of the same and the weld area is placed under increased pressure for the all-over metallic bonding of the part ends (11, 11').

8. Method according to claim 7, characterized in that at least one part end (11, 11') is moved in a circulating manner to increase the temperature or to adjust the joint temperature of the face areas of the parts (1, 1').

9. Method according to one of claims 7 or 8, characterized in that to increase the temperature of the face areas of the parts, the part ends are moved around the alignment or joint axis (X) in the same direction in a circulating manner at an opposite spacing respectively to the axis.

10. Method according to one of claims 7 through 9, characterized in that after the pressing together of the cross-sectional surfaces and the axially divergent movement of the part ends to heat them, the pressing force is reduced, an axial alignment of the parts is carried out and subsequently an increased pressing pressure is built up for the metallic bonding of the same.

11. Method according to one of claims 7 through 10, characterized in that a pre-heating of the face surface areas of the part ends takes place before the heating step.

12. Method according to claim 11, characterized in that a pre-heating of the face surface areas of the part ends takes place through relative movement of the same with reduced positioning pressure.